35. (Amended) An isolated nucleic acid encoding a polypeptide comprising a *hedgehog* amino acid sequence which is at least [95] <u>98</u> percent identical to a *hedgehog* protein <u>of</u> [selected from the group consisting of SEQ ID No:16 and] SEQ ID No:17, [and fragments] <u>or an N-terminal fragment having a molecular weight of about 19 kD</u> thereof,] which *hedgehog* amino acid sequence <u>or fragment thereof</u> [(i)] binds to a *patched* protein[, (ii) regulates differentiation of neuronal cells, (iii) regulates survival of differentiated neuronal cells, (iv) regulates proliferation of chondrocytes, (v)] <u>or</u> regulates proliferation of testicular germ line cells[, or (vi) functionally replaces drosopholia hedgehog in transgenic drosophila fly, or a combination thereof].

39. (Amended) An expression vector, capable of replicating in at least one of a prokaryotic cell and eukaryotic cell, comprising the nucleic acid of claim <u>35</u> [47, 48 or 50].

40. (Amended) A host cell transfected with the expression vector of claim <u>39</u> [51] and expressing said recombinant polypeptide.

42. (Amended) A recombinant transfection system, comprising

(i) a gene construct including the nucleic acid of claim <u>35</u> [47, 48 or 50], operably linked to a transcriptional regulatory sequence for causing expression of the hedgehog polypeptide in eukaryotic cells, and

(ii) a gene delivery composition for delivering said gene construct to a cell and causing the cell to be transfected with said gene construct.

43. (Amended) The recombinant transfection system of claim <u>42</u> [54], wherein the gene delivery composition is selected from a group consisting of a recombinant viral particle, a liposome, and a poly-cationic nucleic acid binding agent,

49. (Amended) An isolated nucleic acid comprising a nucleotide sequence which encodes an amino acid sequence of SEQ ID No. 17 or <u>an N-terminal</u> fragment thereof <u>having a molecular weight of about 19 kD,</u> which <u>amino acid sequence or fragment thereof</u> binds <u>to</u> *patched* [*ptc*].

52. A nucleic acid according to claim 49, further comprising a transcriptional regulatory sequence operably linked to said nucleotide sequence.

53.   (Amended) An expression vector, [capable of replicating] <u>configured for replication</u> in at least one of a prokaryotic cell and eukaryotic cell, comprising the nucleic acid of claim <u>49</u> [51].

54.   (Amended) A host cell transfected with the expression vector of claim <u>53</u> [51].

62.   The nucleic acid of claim 49, comprising the nucleotide sequence of SEQ ID No. 8.

63.   A nucleic acid which encodes a Desert hedgehog protein of human origin.

64.   (Amended) The nucleic acid of claim 63, which contains [a part or the whole of] either the nucleotide sequence of SEQ ID No: 8 or its complementary nucleotide sequence.

65.   The nucleic acid of claim 63, which is inserted into an expression vector.

66.   The nucleic acid of claim 64, which is inserted into an expression vector.

67.   The nucleic acid of claim 63, which encodes an amino acid sequence of SEQ ID NO: 17.

68.   The nucleic acid of claim 64, which encodes an amino acid sequence of SEQ ID NO: 17.

69.   The nucleic acid of claim 63 or 64, which is introduced into an appropriate host.

70.   The nucleic acid of claim 65 or 66, which is introduced into an appropriate host.

REMARKS

Upon entry of the above amendment, claims 1-35, 39-43, 47-49, and 51-71 are pending in the application. Claims 1-34, 41, 47-48, 55-61, and 71 are withdrawn as being directed to a non-elected invention. Applicants will cancel such claims upon indication of allowable subject matter. Claims 36-38, 44-46, 50-51, and 72-74 have been cancelled without prejudice. Amendments and cancellations presented in this response are made to expedite prosecution of the claims in the present application. Applicants reserve the right to prosecute claims of similar or differing scope in subsequent applications. Support for the amendment to claim 35 reciting 'at least 98 percent identical' may be found on page 22, line 32. Applicants will now address the concerns raised by the Examiner in the order presented in the Office Action.